REMARKS

In section 2 of the Office Action, the Examiner objects to the drawings, asserting that Figure 1 should be designated by a legend such as --Prior Art-- because it is the same as Figure 5 in JP 407192416. The Applicants respectfully traverse this objection. Although the figures look similar to each other, it cannot be determined whether they are identical, because Figure 5 in JP 407192416 is in Japanese and it is unclear whether every unit in that figure is identical with Figure 1 of the present application, which is to enable a reader to comprehend the basic configuration of the present invention, prior to the description of essential features. In the specification, there is no statement that the Applicants admit the basic configuration as shown in Fig. 1 illustates only what is in the prior art.

In section 3, the Examiner objects to the title as being not descriptive. This objection is not understood. It appears to the Applicants that the title "carriage servo control system and information-recording medium in which program for carriage servo control is recorded" is clearly indicative of the claimed invention. The Examiner is respectfully requested to either withdraw this objection or clarify why the title is not descriptive (such as suggesting a new title).

In sections 4-5, the Examiner rejects claims 1-11 under 35 USC 112, second paragraph, asserting that it is unclear what are the periodic signal producing means and supplying means as recited by claim 1. As stated at page 16, lines 22-23 of the specification, the "pulse producing unit 27"

serves as the periodic signal producing means. Thus, it is believed that the feature "periodic signal producing means" is clearly supported and explained in the specification. Moreover, at page 10, lines 13-14, the specification clearly states that the driver unit 7 serves as supplying means. For the purpose of clarification, the phrase "supply means" has been amended to "drive signal supply means". The Applicants believe that the meaning of this phrase is now clear.

Further, the Examiner asserts that claims 2-10 recite only desired results, but no further elements/means are recited to yield such desired results. The Applicants respectfully disagree. For example, claim 2 recites "wherein said periodic signal producing means produces the periodic signal made up of only a signal component with a frequency not more than a predetermined frequency". These features are not "desired results" or functional features. It is stated that the periodic signal is made up of only a signal component of a certain frequency. The specific implemention of this feature is well known in the art and is not part of the claimed invention.

Under MPEP 706.03(d), if the scope of the claimed subject matter can be determined by one having ordinary skill in the art, a rejection under 35 USC 112, second paragraph would not be appropriate. For example, when claiming a computer, an applicant does not have to recite the detailed structure of each chip or each circuit. Similarly, the Applicants believe that the scope of the claimed subject matter recited by claims 2-10 can be understood and determined by one having ordinary skill in the art, and that no additional elements need to be recited.

Moreover, the claimed subject matter in claims 2-10 are described in relevant part of the specification (for claim 2, see page 24, line 21 to page 25, line 15; for claim 3, see page 18, line 11 to page 20, line 12; for claims 4, 6, 8 and 10, see page 24, line 21 to page 25, line 15; for claim 5, see page 20, line 1 to page 21, line 18; fir claims 7 and 9, see page 22, line 5 to page 23, line 5). It is believed that one having ordinary skill in the art should understand the meaning of these features after reading of the disclosure.

Regarding the subject matter of claims 7-9 (including the phrase "partial periodic signal"), it is described in the specification, page 22, lien 5 through page 23, line 5. The switch 32 produces a partial periodic signal, i.e. a switching pulse signal PD and supplies such a pulse to the multiplier 28. The partial periodic signal is multiplied by the tracking error signal to produce the drive signal. Thus, the Applicants believe that claims 7-9 are sufficiently supported by the specification and that all rejections under 35 USC 112 have been overcome.

Rejections under 35 USC 102(b) and 35 USC 103(a)

In section 7, the Examiner rejects claims 1-11 under 35 USC 102(b) as being anticipated by or, in the alternative, under 35 USC 103(a) as being obvious over JP 407192416 (in view of Matsumoto et al. and Katsuhara et al.). These rejections are respectfully traversed.

JP 407192416, Matsumoto et al. and Katsuhara et al., standing alone or in combination, do not disclose, teach, or suggest, *inter alia*, the following features recited by the amended claim 1 of the present application:

"error signal producing means for producing an error signal showing an error between a radiated position of the optical beam on the recording medium and a position of the track";

"periodic signal producing means for producing a periodic signal of which period is constant and previously determined so as to correspond to a movement accuracy of the carriage means"; and

"drive signal producing means for producing a drive signal to move the carriage means on a basis of both the produced periodic signal and the produced error signal".

JP 407192416 describes a carriage servo device capable of stably operating without being affected by the eccentricity of a disk. In this reference, the waveform of the tracking error signal is generated through a ramp generator to add an offset component, in order to provide the waveform from which the tracking error components due to eccentricity of the disk are removed. On the contrary, the partial error signal of the averaged tracking error signal in the present application is multiplied by the pulse signal having the predetermined period to produce the drive signal.

Moreover, none of the cited references disclose the claimed features that the drive signal is produced on the basis of both the produced periodic signal and the produced error signal, as recited by claim 1 of the present application. In JP 407192416, the waveform of the signal (as shown in Fig. 3) is merely a result of waveform generation in which the offset component "ß"is added to the waveform "α" from the ramp generator. Clearly, it is not produced on the basis of both the periodic signal and the error signal. The comparator 5 of JP 407192416 only makes a comparison with a reference

voltage, which is irrelevant with the production of the drive signal from the periodic signal and the error signal as recited in the claimed invention.

Matsumoto et al. and Katsuhara et al. are cited for the feature of system clock sources (interpretted by the Examiner as period signal generating means). However, the system clock sources in these references are not combined with an error signal to produce the drive signal to move the carriage means. Thus, they do not disclose the specific drive signal as recited by claim 1 of the present application.

At page 4, paragraph 1 of the Office Action, the Examiner asserts that it would have been obvious to modify the base system of JP 407192416 with the clock signal sources from Matsumoto et al. and Katsuhara et al. , to "provide for system clock sources in order to provide drive pulses as required". The Applicants respectfully disagree. JP 407192416 concerns stably operating the carriage servo device without being affected by the eccentricity of the disk. There is no suggestion or motivation to combine the periodic signal and the error signal to produce a drive signal.

MPEP 2131 states that a "claim is anticipated only if **each and every element** as set forth in the claim is found, either expressly or inherently described, in a single prior art reference," quoting *Verdegaal Bros v. Union Oil Co. of California*, 814 F.2d 628, 631 (Fed. Cir. 1987). Under MPEP 2143, to establish a prima facie case of obviousness, the prior art reference (or references when combined) must teach or suggest all the claim limitations. Since the cited references fail to teach or suggest the above-quoted features of claim 1 (esp. the feature that the drive signal is produced on a

basis of both the periodic signal and the error signal), the Applicants respectfully submit that claim 1 is patentable. Claims 2-10 are also patentable, at least by virtue of their dependency from claim 1.

Similarly, claim 11 recites, in part, "error signal producing means for producing an error signal showing an error between a radiated position of the optical beam on the recording medium and a position of the track"; "periodic signal producing means for producing a periodic signal of which period is constant and previously determined so as to correspond to a movement accuracy of the carriage means"; and "drive signal producing means for producing a drive signal to move the carriage means on a basis of both the produced periodic signal and the produced error signal". Claim 11 is patentable for the same reasons as claim 1.

The Applicants have attempted to address all of the issues raised by the Examiner in the Office Action as the Applicants understand them. The Applicants believe that the Application is now in condition for allowance. If any point requires further explanation, the Examiner is invited to telephone Troy Cai at (323) 934-2300 or e-mail Troy Cai at tcai@ladasparry.com.

The Commissioner is authorized to charge any additional fees which may be required or credit overpayment to deposit account No. 12-0415. In particular, if this response is not timely filed, then the Commissioner is authorized to treat this response as including a petition to extend the time period pursuant to 37 CFR 1.136 (a) requesting an extension of time of the number of months necessary to make this response timely filed and the petition fee due in connection therewith may be charged to deposit account

no. 12-0415.

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(Date of Deposit)

Troy Guangyu Cai
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Respectfully submitted,

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